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ABSTRACT

An analysis of the efficacy studies of special education in Sweden leads the author to conclude that many studies are open to criticism and that they have produced an unwarranted attitude of disillusionment. Cited is the need for more discussion on a theoretical basis in order to design constructive research and develop more effective teaching strategies based on examination of optimal learning conditions for handicapped children. Compared are two theories of treatment: the simple integration theory (in which handicapped students are taught together with nonhandicapped pupils), and the intensity theory (in which handicapped students receive individualized teaching in any type of special education arrangement). The author suggests that the indensity theory is the more promising one. (Author/CL)

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REMEDIAL TEACHING - A FORWARD LOOKING THEORY

Olof Magne

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There seems to be a pessimistic attitude in many countries as to the effects of public schooling on economic growth, and this seems to apply also to special education. But studies which have led to a pessimism concerning the efficacy of special education are often open to criticism. We need more discussion on a theoretical basis than we have had. This discussion cannot accept a pessimistic view of the schooling. We have to contemplate research data constructively and with this approach work for future strategies, involving educational and social benefits.
The author suggests that future research on remedial teaching should concentrate on finding optimal learning conditions for handicapped children. Two theories of treatment are compared. They are callad (1) The simple integration theory and (2) The intensity theory. The author suggests that the latter theory is the more promising one for research directed at analyzing optimal conditions for different aspects of remedial teaching.

Keywords: Handicap, remedial teaching, special education, theory of treatment, integration, intensity theory.

Introduction

The purpose of my paper is to discuss generally the importance of recognising adequate treatments for children with handicaps.

This choice of subject arises from my experiences of a Swedish project during the years 1963-70 to investigate individually given remedial teaching for children with learning difficulties, mainly in mathematics (dyscalculia). The Swedish National Board of Education sponsored the project and gave considerable economic aid to local authorities who arranged this form of special education. I was responsible for the planning and evaluation of the project.

The experiences gained from this project have been summarized in several reports and in a book in Swedish, where I also have described a rationale of remedial teaching in mathematics clinics and in ordinary classes. The present paper is a continuation of this work (Magne, 1973, 1974a and b).

This paper treats three main topics. (1) In the first part I shall discuss what I would like to call the present pessimism concerning special education. (2) The second part deals with the background of theories for optimal treatment of handicapped children. (3) The final part of the paper draws upon the discussion in the first and second part and presents what I have called the "intensity theory".

Optimism or pessimism in education?

Some people speak of a wave pattern in the history of ideas, of an undulation of the leading ideas. Such undulations can also be seen in the history of education. For example, this concerns the conception of the possibilities and limitations of education. Some periods have looked upon the role and influence of education with great optimism, others with a marked pessimism.

During or immediately after the second world war, the question of how schooling would improve the lives of the prospective subjects and how it might contribute to the restructuring of the society was met with a decided optimism about the future. In most countries the school legislation during this time assumed explicitly or implicitly that schools are central in any process that generates or redistributes opportunities. The ultimate aim would be equality through education, not only in an socio-economic perspective, but also therapeutically, with respect to handicapped children, such as the blind, deaf, physically injured, mentally defective and so on. This meant that special education was also permitted to expand considerably.

But what is the situation today? Is there not a pessimistic tendency in the school debate of today? I am thinking of Illich's society without school.

I am also thinking of the critical writings by Jensen, Jenck and others concerning the relations between the outcomes of learning and the inputs that go into the process. As far as I can see there is a remarkable disillusionment or doubtfulness today as to the economics of education. Nobody seems to accept the dramatic effects of public schooling on economic growth any longer. In some new studies (cf. Arrow, 1973) education is looked upon as a filter mechanism rather than a wealth-increasing instrument, where schools function as pieces of an assorting or classification machinery. This approach emphasizes that in relation to the labour market the schools' main role is to inform the employer of the specific qualifications possessed by the labour force. In its most extreme form this group of scientists denies that education can usually increase productivity.

I am not so well-acquainted with the situation in other countries, but as far as I can see the school debate in Sweden has already been influenced by this pessimistic trend. I will illustrate this with some aspects of special education. Is it possible that people who represent this opinion have struck a damaging blow to special education?

Efficacy of remedial teaching

The criticisms of special education which recently have been reported are mainly based on trials to study the efficacy of education. Only too often, however, the designs of these investigations seem to be unreliable.

I would like to exemplify with experiences from Sweden.

Remedial teaching and every other form of special education increased in Sweden like a rolling snowball during the sixties. It was gradually adapted into assisting normal schooling in ordinary classes. Probably it also became more similar to the ordinary schooling. The advantages of remedial reading clinics and similar arrangements were highly praised, as they permitted a high degree of integration. Towards the end of the sixties the government delegated to the local authorities the right to decide the numbers of hours of remedial teaching. This led to a doubling of hours for remedial teaching between 1966 and 1971. But a sudden stop was decided by the government in 1971 because of this immense increase. Limits were set for the remedial teaching hours, and in some cases it was necessary to reduce the number of remedial hours considerably.

The generosity during the sixties, followed by the restraint during the seventies, has been reflected by a parallel discussion of the lack of efficacy of the special education. This discussion has been summarized in an interesting way by a government committee (SIA) in a report with the title Skolans

arbetsmiljö (The Intrinsic School Organisation). It is typical of this committee, which was dominated by politicians, that it has interpreted the studies on the efficacy of special education as indicating that, by and large, no reliable positive effects could be proved.

The summary reported by this Swedish committee displays one fact, namely that today there are politicians who seem to be less positive to special education than used to be the case ten years ago. At any rate, this applies to Swedish conditions.

Nevertheless, the conclusion just mentioned above must be severely criticised. This is not the place to find faults with studies of this kind. Two reservations must be mentioned, however: (1) The design of the majority of the cited studies is such that the research is wide open to criticism. Above all, they are mainly product analyses, but should have been planned as process analyses to some extent in order to show whether the supposed remedial teaching was quite different from the control conditions which were studied at the same time. (2) The question of which possible selective process factors might be efficient in different working conditions should have been considered, but seems to have been disregarded intentionally or unintentionally in most studies.

There is one interesting Swedish study by Gustafsson & Stigebrandt (1972) which shows that in one studied case there was no significant difference between the teaching in special classes and the teaching in ordinary classes. The conclusion of this study should be that no difference as to the efficacy of the special education would here be possible. As these two authors were able to demonstrate, in some other classes there seemed to be clear differences between remedial and ordinary teaching, and in this case a difference in the effect of the teaching would be expected.

In addition, I think we should remember that in many studies a reliable effect of the special education is found. Which are the reasons why some studies display differences, but other studies are unable to do so? This problem is also worth examining.

I would like to end this discussion with the following summary. If these pessimistic conclusions are accepted at their face value by policy makers as representing a set of educational facts, then the studies might have disturbing implications, as the findings could be interpreted as providing support for those who want to withdraw expenditure from schooling, especially schooling for disadvantaged children. On the other hand the studies are interesting guides for further research, hopefully with a more advanced design.

That which above all needs an explanation is perhaps the general pessimism in education rather than the results of a couple of studies on the efficacy of special education.

We should admit that it seems amazing that well-planned and skilfully delivered remedial teaching, supported by good material resources, should fail, when it is directed at as few as 2 or 3 pupils, and yield no better result than the teaching in a class of 30 to 40 pupils. It appears to me that the learning of children in a special class of ten or less, where the pupils have similar mental ability, should be more effective than if the same children have to compete with 20 more able children. It is also questionable if the other pupils can profit from teaching where probably a considerable part of the teacher's time has to go to the handicapped (who may be less able, have physical handicaps, or be emotionally disturbed). In addition, what seems to be evident from the different studies is that handicapped children, and particularly the less able and the maladjusted, tend to be rejected by their unhandicapped classmates and thus not accepted as partners in the activities of the integrated school.

As professor Gjessing (1974) of Bergen, Norway, has pointed out, this produces paradox. On one hand the teachers confirm that special education is effective and the majority of the parents and pupils agree, but on the other hand some studies by researchers indicate that special education is ineffective. Who is right? I for one prefer to side with professor Gjessing, who says that in this controversy he would rather back the teachers than the scientists.

Thus, the crucial problem is. How should we procede in future research? I would like to say that we urgently need penetrating analyses of theories for strategies of proper education for handicapped children. We should discuss philosophies of education and political goals and confront them with research data and theories in child psychology and finally try to construct more efficient teaching or treatment strategies.

I think that we can already descry on the horizon a new educational optimism. I shall come back to this later in this paper. But first let me say a few words about the children we teach.

The problem of understanding a handicapped child

I do not know if we all really understand the extent of the enormous difficulties a handicapped child has to struggle with, when he is confronted with textbooks and teaching aids in school. The school learning can lead to absurd consequences, if it is not organized in an adequate way. Professor

Befring (1975) of Århus, Denmark, has remarked that several pupils who have gone through the compulsory school have mainly learnt that they cannot learn, that they are untalented and that they have acquired no useful knowledge from their many school-days. It is necessary to design the schooling to suit also the handicapped pupil, although he may misinterpret much in the school.

This reminds me of an episode which Piaget has related.

Piaget asked a seven-year-old boy if he knew how the lake of Geneva had come in to existence. The boy said that a giant once threw a big rock from a mountain, so there was a large hole where the rock came down. Piaget found this an amusing story and asked the boy if he wanted to know what really had happened. Then he described how glaciers had dug out the depression, thus causing the lake. The boy apparently understood what Piaget had said. Some months later they met again. Piaget asked the boy if he could remember their conversation about the lake of Geneva. The boy said, yes. Well, said Piaget, do you also recall how the lake really came to existence? - Yes, was the answer, there was a big giant who was standing on a high mountain, and he threw a big rock ...

Why had the boy persisted in this creation of this imagination? The opinion of Piaget was that the boy did not understand either the geological structure of this area, or the more general logic which he should have used. The world of the boy was populated by miraculous creatures, existing not only in his fantasy world but also in concrete geological phenomena. But this sort of thinking was a consequence of his more general reasoning power. You can make a hollow when you throw a stone, so imagine a powerful giant throwing a huge rock.

Such 'giants' may be of a great importance in the world of ideas of a small child, a low achiever, or an emotionally disturbed child, because of their poor or distorted experiences.

Helen was a typical low-achiever - I hope you do not mind this expression. She was late in grasping the meaning of the letters and numbers. At the age of nine she got a few weekly hours of remedial teaching. Helen did not understand how to write 2 or 3 digit numbers. We let her use a set of blocks we have called the ten-base material and have found most useful for getting small or low-achieving children to learn the number system.

Helen used these blocks with her exercises. To begin with it appeared nearly impossible for her to realize the meaning of the numbers. Nor did she seem able to see the significance of the material. But an improvement was on its way. At first Helen succeeded in producing the correct set of

blocks when the teacher had, for instance, instructed her to represent the number 207, or to tell the number 207, when the teacher had laid the blocks in front of her.

For a long time Helen could only work with the help of the blocks. But one day she achieved a dramatic triumph. Helen said, I need no blocks. Because when I write 207, I have two flats and seven small cubes inside in my head. And no longs at all. And so, you see, miss, it is 207.

It is this type of attainment for which we must aim. To begin with, we wanted this little girl to use all the concrete things she had around her, so that gradually she could develop her capacity to abstract and be able to see the things with her inner eye only - interiorize, as Piaget calls it. A 'giant' was defeated. A small amount of logic was caught. After a long time of strenuous work by the teacher this had happened, but first of all through the efforts of the child. It is often necessary really to struggle with the problems and to do so with intense concentration and keen interest. But this concentration and this interest must be on the side of the child.

Let me also demonstrate a case of an emotionally disturbed girl.

Mary was a maladjusted child from a problem family. Her intelligence was undisciplined and unpractised. Her attitude was very negative towards most adult persons in her neighbourhood. She was mostly together with her gang, which she domineered. To begin with her school attainment was very low. She was transfered to a special class where her performance improved dramatically. From the age of ten she was again taught in an ordinary class, but once more she failed in her school work. Perhaps this was the main reason why she developed a suspiciousness of all the things the school represented. Her neverceasing question was, "What's the good of that?"

During her eighth school-year (at 15) she was again transfered to a special class. The teachers of this class had introduced a method which she had not met earlier, of confronting the pupils with realistic problems and getting them to solve them. Some pupils one day visited a newlybuilt block of flats. Somehow the question was raised, how to decorate and furnish one of the flats. The pupils found the suggestion interesting. They began to work on this project with great enthusiasm - certainly not without conflicts, but with absorbing concentration and ambition.

This experience stimulated Mary and had a regenerating effect on her. This was a new type of learning. It fitted Mary's concrete attitude to life. Her distrust of school remained, but again she began to think better of her school studies.

Four important principles

I have taken these cases a little at random. They may demonstrate what I consider important principles in the remedial teaching of children who are handicapped in one way or another.

A very interesting project is described by Witty (1949), which was carried out in the United States during the last war. Its aim was to educate culturally disadvantaged soldiers who were functional illiterates. Such soldiers were transfered to special units in order to give them an opportunity to train reading, writing and arithmetic. The result of the training was remarkable. 93 % of the soldiers attained a functional ability to read in eight weeks.

Witty was of the opinion that the rapid learning was made possible by the concentrated training and the special features of the organisation.

I will summarize what is known in this field in four principles.

(1) The efforts of the student
(2) The use of realism
(3) The selective choice of content
(4) The co-ordination between teaching method and aids

Firstly, the efforts, the will power of the student seem to be a necessary condition. The learning must be active. It is probably true that - apart from inconspicuous exceptions - it is the learner who is doing all the effective learning - all by himself. When this will to study is lacking, we should begin the remedial teaching to arouse or revive the ambition of the pupil to engage himself in the studies. It may take a very long time. As Freire (1970) has accentuated the first objective is to arcuse the need to learn and then to maintain it and, thirdly, to build the structure of knowledge on this basis. Usually this procedure makes it necessary to concentrate additional teacher time on the handicapped.

Secondly, we need a realistic approach. A handicapped child often has poor or distorted experiences, which are insufficient and inadequate for the verbalized education of the school. But associations to reality are different things for young and old pupils. We must be guided by the typical interests of the seven-year-old child and offer situations suitable for this age. If we have to deal with adolescents, there are to some extent other interests we must stimulate or satisfy. Here we get on to the importance of language. It often happens that handicapped children have a poor understanding of many of the words they use. In such cases it is not only word analysis that must be trained, it is also - and first of all, in fact - the underlying reality that must be analyzed.

Thirdly, the handicapped pupil should be guided in making a selective choice of what to study in order to get a meaningful adjustment to the learning expectation of the pupil, cognitively, affectively, and volitionally. In some cases it may even be necessary to construct individualized remedial programmes. A reduction of the subject content can help this child in two respects, partly to prevent failures, partly to afford intensified help where the child has its specific weaknesses. We must not drown the child in too strong or too vast torrents of information.

Fourthly, we have to accept that there is no simple method to teach children with handicaps. In most cases there are motor disturbances, cognitive difficulties, affective stress symtoms, and volitional oddities in a rather puzzling mixture. The remedial teaching must often direct itself to one sector at a time, so the pupil can have a concrete object for his learning, such as the multiplication table. We must treat the multiplication table in the context of activities which lead to an understanding and proficiency in the multiplication facts. In this case no general therapy is of any use, although it may prepare the pupil for the training in multiplication. But we also have to treat the whole child, the personality of the child. Therefore, it is important that a handicapped child has the benefit of the direct, personal and sympathetic attention given in remedial teaching. It is also important to integrate this child into a normal environment, but there is a danger that for a handicapped child suffering from an acute state of stress, who is sensitive to disturbances from the surroundings, integration may lead to an increase in stress. There ought to be many possible treatments, not only integration. While the handicap is acute, factors should be considered together carefully and lead to measures resulting in a maximum of positive opportunities.

Optimal conditions

Through the studies of efficacy it has been evident that remedial teaching is sensitive to several interferences, as to the type of organisation, the quality of premisses, the cooperation and the sympathy of the teachers and the parents.

Therefore, it seems necessary to arrange many forms of treatment - in the ordinary class as well as in remedial teaching - which work under optimal conditions for every handicapped child taking part. It is useful to test the conditions with the aid of some kind of checklist. Adrell and myself have presented such a checklist (1973) of seven items to enable the staff of a school to find out whether a particular child benefits from an optimum

learning situation. Naturally, it is seldom possible to arrange the conditions as fully optimal, the checklist refers to questions to be answered by the staff concerning different aspects of the learning environment or other significant circumstances all of which may influence the child positively, and they should then be able to plan the special education to be as optimal as possible. The check-list contains the following items.

(1) Organisation of the learning situations

Have we succeeded in getting: an effective number of pupils in the group
suitable premises
effective length of lessons
sufficient diagnosis

(2) Learning readiness and objectives

Have we tried to optimize the following conditions:
Is the teaching adapted to the learning readiness of the pupil
Have we made and suggested to the pupil a good selective choice of objectives
Does the pupil get sufficient time for training of various types

(3) Co-operation between teachers

How have we succeeded to plan co-operation:
Is the co-planning efficient
Do the teachers coordinate their teaching

(4) The special teacher's guidance and teaching

How is it possible for us to accomplish the treatment:
Can the special teacher give intensified guidance and teaching if required
Can the special teacher give varied instruction
Does the teaching aim at developing the personality of the child

(5) Methods

How are we using different strategies:
Is the teaching individualized in an effective way
Is concretion used systematically
Is there a suitable rotation of different forms of treatment

(6) Use of school equipment

How do we look after the pupil's need of learning material:
Is there a wide variety of teaching aids
Is there a good supply of apparatus for structural learning
Have we a suitable supply of drill material
Can we easily pass from intensive to more extensive training

(7) Information to pupil and parents

How do the pupil and the parents get information:
Do the pupil and his parent continually get correct information concerning the pupil's progress
Do we let the pupil experience success regularly

Demands on theories of remedial teaching

A theory (or theories) concerning remedial teaching must satisfy several demands, but I shall not discuss this subject in detail. However, I would like present the following four requirements.

(1) The theory should deal with didactic problems, but place them in a social perspective.

(2) The theory must be based on empirical observations. Thus, it should be in accordance with accepted data from research in learning and child development.

(3) The theory should assume or adopt a statement or definition of what educational handicap means.

(4) One should be able to incorporate the theory in at least one valid political ideology. Concerning point (4), I suggest that the minimum political requirement is that the society aims at trying to prevent or compensate for limitations or restrictions set by abilities or interests or attitudes among handicapped children. I suppose that no present political ideology is opposed to such a minimal requirement.

I would also like to comment on point (3) that among the many different definitions of handicap, I consider the most convenient one to be the psychometric definition. I prefer this definition in the following presentation.

There are various kinds of educational handicaps, physical and mental. Some handicaps concern specifically sensory and motor functions, other handicaps refer to intellectual, volitional, affective reactions, or reactions to groups of people. One common relation between these varieties is that they may be described as minus-variations of behaviours which are to be observed during the school age. Naturally, this is a simplified picture which only tells part of the truth.

We find that the handicapped pupil in the situations concerned learns more slowly than his average peers. Therefore, we may talk of sight or hearing defects, motor disturbances, mental retardation, criminality, maladjustment, or specific learning difficulties in writing, reading, mathematics etc., or similar designations. There is no subsidiary moral motive behind such notations.

The goals for the school - and for its remedial teaching

In passing I would like to touch upon the goals for the education. I take it for granted that we shall accept and proceed from politically decided principles, such as: the school should provide the formal and real prerequisites for a balanced development of the children. The goals may, however, vary

considerably from country to country. Accordingly, the curriculum and the teaching should have their starting-point in the principal goals and be adapted to the various levels of maturity and interests of the pupils.

The goals of special education must be looked upon as a special case, following-up the principal goals. But first of all the principal goals should mean that the handicapped children too have opportunities of accomplishing meaningful and successful studies; they should have chances to remove losses of experience due to the respective handicaps or of earlier neglect.

In this context I should like to point out, however, that there is an important danger to be aware of.

The political-decision concerning educational goals may have intrinsic damaging consequences for individual students. If we do not organize sufficient and effective facilities for children with handicaps, new behaviour problems would arise which are caused by the intentions of the goal system. The school, or more generally, the education is never responsible for handicaps as blindness, deafness or paralysis. Probably, also, such tendencies as exaggerated anxiety or aggressiveness would be found even if there were no education of any kind. But it may be true, as is suggested by a Swedish governmental committee (SIA) that has recently published a report on the internal organisation of the school (p. 215), "It may be maintained that the goal of the school, its curriculum and its activities start a chain reaction which involves a change in which the school gradually triggers off weaknesses in the children, and thus is the creator of the more pronounced handicaps. Thus, the decision of parliament is the ultimate cause of the transformation of a harmless functional frailty into a manifest school handicap".

This hypothetical outcome of educational activities must be neutralized by arrangements which should also follow from the school legislation. Special education could be said to include the set of conditions which ought to guarantee that no child should be handicapped through the mediation of the school.

This makes it possible for us to define special education. Special education is the set of efforts or arrangements which guarantee that every child with handicaps is given the amount of input school resources that he requires in order to develop his capabilities optimally.

However, it is not usually a question of normalization of the handicapped child, although some people - even research workers - consider special education a failure, if it has not achieved full normalization. In fact, we may be content if we are able to reduce the social and individual effects of the handicap.

James S. Coleman discussed this question in the Oxford Review of Education (1975, pp. 27-29). He has argued that the concept of equality of educational opportunity is a mistaken and misleading concept. This is obvious. There is seldom or never any possibility of normalizing the behaviour of a handicapped person, "The word 'equality' is either too strong, or the word 'opportunity' must be regarded as purely formal, not substantial opportunity. For equality of effective opportunity in competition as an adult is again unachievable through schooling, even an unequalized schooling that would attempt to compensate for initial handicaps." (Coleman, 1975, p. 28.)

Thus, what we shall hope to attain is not to normalize the behaviour, but to move the handicapped child nearer to the average than he could have possibly got without the help of the remedial teaching. This could be called "reduction of inequality" (a term used by Coleman).

Approaches to treatment of handicapped children

There seems to be great confusion concerning theories of the proper treatment of pupils with various learning difficulties (cf. e.g. Ellis, 1963; Kirk, 1962; Johnson & Myklebust, 1967; SIA, 1974, and several authors in the first number of the Oxford Review of Education, 1975). These problems seem to have been brought to a fruitful discussion only during the last ten or fifteen years. Starting from these writings, I would like to suggest that special education can be based on two possible alternative assumptions:

(1) the maintenance assumption, or
(2) the acceleration assumption.

The first one is pessimistic and presumes that no actions can result in a decided improvement and that one can only hope for maintenance of a present status of behaviour. The learning capacity should not deteriorate. The child should not be more aggressive. His hearing shuld not function worse. Therefore, the treatment aims at keeping the behaviour of the individual unchanged, so that he may get a job after his schooling, corresponding to his deficient capacity.

The other theory is optimistic. According to this theory it is possible and necessary to raise the performance, or affectivity, or volition, or motor levels, so that the development of the respective traits converges towards the developmental trends of children of the same age.

I assume that the maintenance standpoint is to be rejected and the acceleration assumption accepted.

Nevertheless, it is difficult to find a clear trend in the theoretical discussion. To begin with, some authors accept handicaps only as sequels of

a conservative society. It is true that they do not exclude the existence of deafness, blindness, and motor or brain lesions, but they tend to ignore them in their discussion or argue that individuals in such circumstances could be looked after in ordinary classes rather easily and that it would be to their benefit.

Most authors, with a basis in sound and practical experience, fint it plausible that there are manifest differences between the pupils in the school and that among these it is possible to distinguish between two, only vaguely defined, theory tendencies, namely what I like to call egalitarianism and personality accentuation. These two approaches may be looked upon as being contrary to each other.

Egalitarianism is based on the belief that society should abolish poverty and similar restrictions on human life through educational measures, thus aiming at making all persons equal.

Personality accentuation aims at giving each individual the best possible opportunities that will enable him to realize his full potential.

It becomes apparent that each of the two approaches permits several different and partly controversial definitions.

Some proposals for "equal rights" in the provision of education reveal confusion and inconsistency on the part of the authors, infused often with incoherent fantasy, says Mary Jean Bowman (1975). She has presented a list of seven notions of "equity" and of certain associated criteria, to demonstrate proposed definitions of equity in the provision of education. I would like to add that in this discussion egalitarianism seems to be mistaken for personality accentuation.

1. Giving equal amounts of schooling (equal schooling 'inputs') to every individual.
2. Bringing every individual to a stipulated minimum level of performance, whatever happens thereafter.
3. Bringing every individual to the same level of performance.
4. Ensuring that each individual receives the schooling that will enable him to realize his full potential.
5. Bringing each individual to the point at which his marginal ratio of added learning to inputs matches that of other individuals.
6. Providing equal opportunity for access to education, whether individuals utilize that opportunity or not.
7. Ensuring proportional representation from every ethnic, social status, sex, or other relevant category of individuals. (Bowman, 1975, p. 74.)

It appears to be absurd to envisage accomplishing full equity for all persons through education, even if aspiring to this aim might be desirable. This has led to attempts to evade the issue by means of the notion of "equal educational opportunities". That has hardly resulted in increased clarification of the goals or possible means of arriving at the goals. Now that there is

a widespread disillusionment concerning the efficacy of reaching an egalitarian society through conventional - or perhaps any - educational reform, this type of theory has gradually been abandoned.

Coleman (1975, p. 28) believes that the concept of equal educational opportunities is mistaken and misleading. He prefers to talk about "reduction of inequality" rather than equality. He says that such a formulation would properly connote the fact that the initial state in which schools find children and the continuing environments outside the school that compete for the child's time, are unequal, and that the school's task is - besides increasing opportunity for all, through what it imparts - to reduce the unequalizing impact on adult life of these differential environments.

Thus we find that equality of educational opportunity has been interpreted in various ways. The first ensuing question is then, how much freedom should be given to individuals (the pupil and his parents) to exercise their option in choosing the length and kind of the schooling. But if there is no prescription for the individual's behaviour, there can be no guarantee that there will be equal opportunities.

Then comes the question of whether equal opportunities should connote input of school resources or output of effect. Equality of output seems out of question, because it appears impossible to form environments which are equal in every respect. Equality of input is a definition which meets with two serious objections (Coleman): One is that such equality would be upheld even if the total school resources provided to each child were minimal, and the extreme, absent altogether. The second objection is that handicapped children may require more of the school resources if any kind of acceptable achievement is to follow. Both these consequences are opposed to the political goals for education which I discussed earlier in this paper.

What has been said about the egalitarian approach also seems to apply to the personality accentuation approach. Both theories leave too many questions unanswered.

Thus it seems that neither the equalitarian nor the personality accentuation approach makes it possible to work out realistic solutions for the schoolroom.

The crucial question is, after all, if any of these approaches are theories which can be adequately used and concern the treatment of handicapped children. Nothing is said about the educational means of giving equality, reduction of inequality or personality accentuation to a boy who at the age of twelve months is diagnosed as hard of hearing, or a 12-year-old girl who has anxiety symtoms. Perhaps we accept, according to Coleman, that we

must try to reduce the inequality. But how? His theory tells us nothing.

Two alternative theories of treatment

Which forms of treatment should we use? I propose two alternative theories (cf. Magne 1974b and 1975):

(1) The simple integration theory, and
(2) The intensity theory.

A research background of these two theories is given, above all, by Piaget and his colleagues in Switzerland.

Among his studies Piaget's discussion of the developmental stages are generally known. His experiments on constancies are also recognized as epochmaking. But I believe that few people are familiar with his interesting studies of learning to accelerate the development through the stages. In many respects these training studies are particularly important to us who work in special education. I would particularly like to draw attention to a comparatively new work by Piaget, Inhelder & Sinclair (1968).

Piaget and his co-workers seem to have established:

(1) That it is possible to accelerate the development.
(2) That this acceleration usually fails with conventional learning procedures.
(3) That the acceleration requires materials and strategies which are adapted to the learning prerequisites (cf. Gagné, 1970) or developmental readiness (cf. Piaget et al., 1968).
(4) That the child can accelerate if it becomes intensively engaged by being subject to an intellectual conflict.
(5) That verbal capacity is not a necessary and sufficient condition for acceleration.

I do not see that we need to be pessimistic concerning the efficacy of special education in the long run, if we accept these research results and base the teaching of handicapped children on this view.

But it means a more complex design and internal organization and a broadening of the approach to special education to include not only specific remediation, but also a considerable number of relevant measures in the whole school situation and certainly also in the total environment of the child.

The meaning of acceleration

I was somewhat surprised a few months ago when I read a report from a psychological project and found the reflection that it had been possible to

improve the behaviour of a group of aggressive adolescents, but that the project seemed to have failed, because the subjects had not reached the adjustment of normal children. When I read this I remembered that it is a prevailing misconception that remedial teaching cures handicaps. This may be true. It is also obvious that it is directed towards this aim, but in reality we have to be more modest. Let us consider an almost deaf child. The treatment is organized to teach the child to compensate its deafness by using alternative sense-organs. This means that the teacher makes use of ways of communication other than those the ear normally uses, and helps the child to exert himself to the utmost in order to learn the strategies of compensational communication. She will train the child to feel sound vibrations, to concentrate on movements, to perceive words that correspond to vibrations and movements. But we may ask ourselves how often it is possible for the deaf child to be successful in all respects, to become like the hearing child.

I think we must reason analogously for other handicaps. We can usually not succeed in bringing a handicapped child up to the standard of its peers, on the other hand we may hope to guide him part of the way. This may be what Coleman refers to with the idea of reduction of in equality.

There is another important practical issue in relation to acceleration. There are some children who have not acquired the necessary learning prerequisites such as learning to read. According to the diagnosis they would not be expected to learn to read for several years. But if this is a child of seven, it would be impractical or hardly justifiable from a humanitarian point of view to postpone the learning. We have to begin the training anyhow. We must try to accelerate the development in order to give the child the opportunity to learn to read.

The simple integration theory

As I suggested earlier, we may distinguish between two principal theories of remedial teaching: the simple integration theory and the intensity theory. I will confine myself to characterizing them briefly (cf. Magne, 1974b).

The simple integration theory seems to be accepted by a Swedish government committee SIA (concerning the intrinsic school organisation), it has so far not been discussed in parliament and even less been subject to decision. Perhaps no country has a special-education system derived from this theory.

Integration may connote many things. In this case I refer to the type of organisation of the school-work where handicapped pupils are effectively

taught together with the unhandicapped by the same teachers, in the same school rooms and with the same curriculum, but not necessarily with the same objectives, time-table, or teaching aids and textbooks. If there is a special teacher at hand, she may conduct her teaching in the ordinary schoolroom, working as an assistant teacher or as partner in a team of teachers. It is considered important that the handicapped child should do his schoolwork in competition with and with assistance from normal school children. The learning theory behind this arrangement is a sociological one, that it is possible to learn normal social skills only if you live in a normal group. It is evident that the integration theory corresponds well with the general political goal theory that the school should provide the best possible opportunities for the pupils, irrespective of social class, housing area, or economy.

The benefits of the integration theory are for instance:

(a) Makes good use of normal life situations.
(b) Does not single out individual pupils for specially treatment.
(c) Lets the pupil regard himself as a member of a normal working group.
(d) Gives good flexible chances of providing help for accidental failures.
(e) It can perhaps lead to a comparatively cheap teaching strategy.

But there are also drawbacks:

(a) The handicapped pupil has few opportunities of being helped effectively by the teacher, if he does not get special material, constructed in accordance with special objectives - but how is he to get this, if he works in an integrated group of pupils?
(b) There is a danger that the handicapped pupil will be treated with a laisser-faire strategy.
(c) The pupil risks developing feelings of failure if he is exposed to comparisons with unhandicapped pupils.
(d) The handicapped pupil has insufficient opportunities to accelerate and draw up level with his class-mates, if no effective remedial teaching may be added.
(e) A moot question is whether the unhandicapped pupils may be hindered by an integrated organisation.

As a consequence of this analysis I consider it very unlikely that too general a theory of integration can be put to effective use.

Instead I prefer a modified theory which retains most of the positive characteristics of the research findings of the Piaget school concerning the importance of intensified learning and that accepts the view that most efficient learning is done by the individual himself, and not by a group.

I have named this theory the intensity theory.

The intensity theory

The intensity theory is an old theory in the sense that its essential features belong to the commonplace, accepted opinion about the educational role of remedial teaching. Nevertheless, it differs in some crucial respects from this conservative view.

If we turn to the intensity theory, we find that it recognizes some pupils as being so handicapped as to need special education. It permits us to teach the handicapped pupil in a heterogeneous class, but according to this theory the pupil will succeed better if he has access to a well-planned, methodical training inside the domain where his handicap is pronounced, and in some cases manifest. These exercises should be dependent on the diagnosed learning prerequisites and lead to acceleration inside their domain. No pupil is assumed to be handicapped in all possible respects. Therefore, it should be possible to compensate some of the handicaps through intensive training, and, in some cases, even extremely intensified education during a limited period. This additional teaching may be intensified in several respects: the teacher could be engaged in teaching the pupil in a small group; the strategy might be specially designed and worked out; and special teaching aids or text materials could be used.

The strength of the intensity theory lies in the opportunity it offers for acceleration. It does not exclude the facilities of a natural environment in most activities inside or outside the school, and during the main part of the time. First of all, it can relatively easily provide the pupil with effective additional teacher hours and intensified training periods.

Thus, the advantages of the intensity theory are for instance:

(a) Obvious opportunities for acceleration.
(b) Effective chances of energetic expert help.
(c) Input of material and strategy may be maximized temporarily.
(d) Good opportunities to concentrate the effective training to critical periods of development.
(e) Does not exclude placement in an ordinary class - but accepts all forms of special education.
(f) The unhandicapped may get advantages.

Possible disadvantages are the following:

(a) The pupil may feel singled out and looked upon as an outcast.
(b) The pupil is temporarily absent from the studies in the class and may miss important topics.
(c) The organization is rigid.
(d) The strategy may be expensive, although this is not certain.

(e) The strategies may be suitable for cognitive or physical handicaps only and not for emotional ones.

It may be possible that my reference to difficulties in mathematics has made me blind to handicaps of a rather different type. I think it may be possible that various learning difficulties should be treated from different theoretical starting-points. Possibly, the integration theory is more suitable in some cases than in others, for instance affective or social handicaps, and the intensity theory in other cases, as cognitive or motor handicaps.

Consequences for future developmental work

As I see it, we should not expect to get much guidance from efficacy studies of the kind that have caused the pessimistic interpretations I have discussed in the first part of this paper. They have often missed the necessary overall view of the wholeness and complexity of the teaching situation and have too frequently limited themselves to a restricted number of easily measurable conditions which usually are not sufficiently representative of the totality of factors.

It is true, however, that special education sometimes seems to be less efficient than it could have been. Usually, there is a constellation of many circumstances to take into consideration to make the remedial teaching suitable for the individual. If the remedial teaching is ineffective, this may be due to an imperfect analysis of the situational factors. Or, the planning of the teaching may be too vague. It could be maintained that only special education which is special in respect to its purpose can be effective. Thus, we ought to find out the optimized set of conditions for each handicap.

The method may be to educate as many pupils as possible in heterogeneous ordinary classes. But I venture the statement that there are some pupils who occasionally or permanently should be transfered to special education in some form that cannot be given in a ordinary heterogeneous class. These are the pupils with severe or specific handicaps who require an acceleration of their learning, faster than can be accomplished in such a class.

Two research and development domains seem to be important.

The first one must comprise the problems, conditions, strategies and learning activities in the heterogeneous ordinary class, where handicapped children are taught. It is an absurd fact that today there seems to be no systematic research or development work to elucidate the optimal strategies for a class of this type. This has resulted in a widespread, deep distrust of the heterogeneous class as an instrument for effective learning among teachers, children and parents. Thus, we are confronted with a large, but impor-

tant development task which, however, is extremely urgent.

The second research and development domain embraces the corresponding problems, conditions, strategies, and learning activities in special education per se. It is possible and necessary to carry out much, perhaps most, of the remediation in ordinary classes. Nevertheless, there are some handicapped pupils who need special educational measures. If they cannot get the optimal learning in a heterogeneous class, these pupils ought to be given the opportunity for special education. It is also important to expose and improve constructively the optimal conditions for different forms of special education with this aim.

Therefore, future research too ought to be more directed at analyzing optimal conditions for different aspects of remedial teaching.

The most promising theory for this purpose seems to be the intensity theory.

The need for a forward looking discussion

I have called this paper "Remedial teaching - A forward looking theory".

I think we need more discussion on a theoretical basis than we have had. This discussion cannot accept a pessimistic view of the schooling. We have to contemplate research data constructively and with this attitude work for future strategies, involving educational and social benefits.

It is a good thing that deprivation problems have been taken up in a thorough debate. It has also been valuable that the efficacy of special education has been questioned, although unfortunately in a prejudiced way. But we cannot be static in this so dynamic field of special education. We must go further and see under which conditions we can best devote our efforts to the best development of the different forms of special education, and investigate which arrangements may give the best possible facilities to the personal development of people with handicaps.

We need a frank discussion where all possible ideas can be reviewed.

If these speculations I have presented in this paper could have that effect I should feel satisfied.

Finally I would like to quote Professor Befring of Århus, Denmark, (1975) who has warned, "No person should be allowed to remember his schooldays as the part of his life when he learned nothing". Instead we ought to aim at giving all pupils as satisfying impressions from their schooling as is possible.

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